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10/768,412

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Charlie Steinmetz

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EXAMINER

MARTIN, LAURA E

ART UNIT

PAPER NUMBER

2853

NOTIFICATION DATE

DELIVERY MODE

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ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/768,412	<b>Applicant(s)</b> STEINMETZ ET AL.	
	<b>Examiner</b> LAURA E. MARTIN	<b>Art Unit</b> 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1,3,7-12,15-34 and 38-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,7-12,15-34 and 38-42 is/are rejected.
- 7) ☒ Claim(s) 43-45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 43 and 44 are objected to because of the following informalities: they lack proper antecedent basis. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 7-9, 12, 15-20, 26-28, 30, 31, 38-40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Childers et al. (WO 99/44830 A1) in view of Pawlowski, Jr. et al. (US 5812168 A).

#### **Childers et al. disclose the following claim limitations:**

As per claim 1: an off-axis printing-fluid reservoir (figure 1, element 12) having a substantially planar leading surface (figure 16, element 12, top surface; page 8, lines 13-15); a printing-fluid interface (figure 16, element 30) on the leading surface and extending into the reservoir and configured to provide bi-directional flow and move printing fluid out of and return printing fluid to the printing-fluid reservoir (outlet supplies to cartridge; figure 14, step 172); an air interface (figure 1, element 28) on the leading surface and extending into the reservoir and configured to provide bi-directional flow and move air into the printing-fluid reservoir as printing fluid is moved out of the

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reservoir through the printing-fluid interface, and move air out of the printing-fluid reservoir as printing fluid is returned to the reservoir through the printing-fluid interface (air inlet allows air into the reservoir; figure 14, step 174).

As per claim 3: the leading surface of the printing-fluid reservoir is configured for lateral insertion into the printing system (figure 1).

As per claim 7: the printing fluid interface is configured to laterally input and output the printing fluid (figure 1; fluid interface supplies fluid and figure 14, step 172).

As per claim 8: the air-interface is configured to laterally input and output the air (figure 1, air interface allows air into reservoir, and figure 14, step 174).

As per claim 9: the printing fluid interface includes a ball and septum assembly (figure 16, elements 122 and 124).

As per claim 12: an off-axis printing-fluid reservoir having a leading surface (figure 16, element 12, top surface; page 8, lines 13-15) configured for lateral insertion into a printing system (figure 1); a printing fluid interface on the leading surface of the printing fluid reservoir (figure 16, element 30) and extending into the reservoir (figure 16), wherein the printing-fluid interface is configured to provide bi-directional flow and output printing fluid from the printing-fluid reservoir during a first mode of operation and return printing fluid to the printing-fluid reservoir during a second mode of operation (outlet supplies to cartridge; figure 14, step 172); an air interface (figure 1, element 28) on the leading surface and extending into the reservoir, wherein the air-interface is configured to provide bi-directional flow and regulate pressure within the printing-fluid reservoir by inputting air into the printing-fluid reservoir as printing fluid is moved out of

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the printing-fluid reservoir through the printing-fluid interface during a first mode of operation and by outputting air from the printing-fluid reservoir as printing fluid is returned to the printing-fluid reservoir through the printing-fluid interface during the second mode of operation (air inlet allows air into the reservoir; figure 14, step 174).

As per claim 15: the leading surface has a substantially planar profile (figure 16, top edge of element 12).

As per claim 16: the air- interface is above the printing-fluid interface on the leading surface of the printing-fluid reservoir (figure 1, elements 28 and 30).

As per claim 17: the air- interface is vertically aligned above the printing-fluid interface on the leading surface of the printing-fluid reservoir (figure 1).

As per claim 18: a single structural piece forms the leading surface (figure 15, element 26).

As per claim 19: the printing-fluid interface is configured to laterally input and output the printing fluid (figure 1).

As per claim 20: the air-interface is configured to laterally input and output the air (figure 1).

As per claim 26: the printing-fluid interface includes a ball and septum assembly (figure 16, elements 122 and 124).

As per claim 27: the printing-fluid interface is configured to receive a fluid connector that is in fluid communication with a printing fluid ejector upon installation of the printing-fluid container into a printing system (figure 1, elements 30, 20, and 14).

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As per claim 28: the printing-fluid interface is configured to deliver printing fluid to the printing-fluid ejector via the fluid connector during the first mode of operation (figure 1, elements 30, 20, and 14 - ink exits reservoir to supply printhead).

As per claim 30: the air-interface is configured to receive a fluid connector that is in fluid communication with a venting assembly upon installation of the printing-fluid container into a printing system (figure 1, elements 28, 18, and 16; figure 14, step 174).

As per claim 31: the air-interface is configured to vent air to the venting assembly via the fluid connector during the second mode of operation (figure 14, step 174).

As per claim 38: a reservoir having an air-interface configured to provide bi-directional flow (air inlet allows air into the reservoir; figure 14, step 174) and a printing fluid interface configured to provide bi-directional flow (outlet supplies to cartridge; figure 14, step 172); allowing printing fluid to exit the reservoir through the printing-fluid interface and allowing air to enter the reservoir through the air-interface as printing fluid is moved out of the reservoir through the printing-fluid interface during a first mode of operation and allowing printing fluid to return to the reservoir through the printing-fluid interface and allowing air to exit the reservoir through the air-interface as the printing fluid is returned to the reservoir through the printing-fluid interface during a second mode of operation (air inlet allows air into the reservoir during printing; figure 14, step 174 when refilling; ink outlet supplies to cartridge during printing; figure 14, step 172 when refilling).

As per claim 39: allowing the printing fluid to exit the reservoir by laterally delivering the printing fluid from the reservoir (figure 1).

As per claim 40: allowing the printing fluid to return to the reservoir includes laterally returning printing fluid to the reservoir (ink container can be turned in any direction, including laterally).

As per claim 42: the printing-fluid interface and air-interface are both configured to provide bi-directional flow while the printing fluid container is seated in a printing container bay (bay not defined; figure 11B, element 50).<sup>33</sup>

**Childers et al. do not disclose the following claim limitations:**

As per claims 1, 12 and 38: a printing-fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein.

**Pawlowski, Jr. et al. disclose the following claim limitations:**

As per claims 1, 12 and 38: a printing-fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein (column 1, line 51-column 2, line 19 discloses any type of cartridge).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing fluid container taught by Childers et al. with the disclosure of Pawlowski, Jr. et al. as it is well known to use different types of printing containers in the art. The disclosure of Pawlowski, Jr. et al. also allows for the reduction of leaking and improvement in the quality of the ink cartridge.

Claims 10, 11, 29, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Childers et al. (WO 99/44830 A1) and Pawlowski, Jr. et al. (US 5812168 A), and further in view of Barinaga (US 5721576 A).

**Childers et al. as modified discloses the following claim limitations:**

A printing fluid assembly containing an air interface and a printing fluid interface.

**Childers et al. as modified does not disclose the following claim limitations:**

As per claims 10 and 29: a ball and septum assembly at an air interface.

As per claims 11 and 32: the printing fluid interface and air interface respectively configured to conditionally block input and output of printing fluid and air unless engaged by a fluid container.

**Barinaga discloses the following claim limitations:**

As per claims 9, 10, 26, and 29: a ball and septum assembly at an air interface (figure 8, elements 102 and 104 – allows air to escape during filling).

As per claims 11 and 32: the printing fluid interface and air interface respectively configured to conditionally block input and output of printing fluid and air unless engaged by a fluid container (column 6, lines 4-17).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing fluid assembly taught by Childers et al. as modified with the disclosure of Barinaga in order to prevent leaks from the printing fluid container.

Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Childers et al. (WO 99/44830 A1) and Pawlowski, Jr. et al. (US 5812168 A), and further in view of Childers (US 6116723 A).

**Childers et al. as modified discloses:**

The apparatus of claim 12.



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**Childers et al. as modified does not disclose the following claim limitations:**

As per claim 21: the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure substantially equivalent to an ambient atmosphere pressure.

As per claim 22: the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure above an ambient atmosphere pressure.

As per claim 23: the air-interface is configured to regulate pressure within the printing fluid reservoir to an operating pressure below an ambient atmosphere pressure.

As per claim 24: the air-interface actively regulates pressure within the printing-fluid reservoir.

As per claim 25: the air-interface passively regulates pressure within the printing-fluid reservoir.

**Childers et al. discloses the following claim limitations:**

As per claim 21: the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure substantially equivalent to an ambient atmosphere pressure (column 2, lines 33-43).

As per claim 22: the air-interface is configured to regulate pressure within the printing-fluid reservoir to an operating pressure above an ambient atmosphere pressure (column 4, lines 40-57).

As per claim 23: the air-interface is configured to regulate pressure within the printing fluid reservoir to an operating pressure below an ambient atmosphere pressure (column 4, lines 40-57).

As per claim 24: the air-interface actively regulates pressure within the printing-fluid reservoir (column 2, lines 33-43).

As per claim 25: the air-interface passively regulates pressure within the printing-fluid reservoir (column 4, lines 40-57).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing fluid container taught by Childers et al. as modified with the disclosure of Childers et al. in order to provide a higher quality printing apparatus in which the pressure is properly regulated.

Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Childers et al. (WO 99/44830 A1) in view of Pawlowski, Jr. et al. (US 5812168 A) and Barinaga (US 5721576 A).

**Childers et al. disclose the following claim limitations:**

As per claim 33: a ball and septum printing-fluid interface on a leading surface of the printing-fluid reservoir (figure 16 elements 122 and 124), wherein the printing-fluid interface is configured to provide bi-directional flow and output printing fluid from the printing-fluid reservoir during a first mode of operation and return printing fluid to the printing-fluid reservoir during a second mode of operation (outlet supplies to cartridge; figure 14, step 172); an air-interface vertically aligned above the printing fluid interface (figure 1, elements 28 and 30), wherein the air-interface is configured to provide bi-directional flow and regulate pressure within the printing-fluid reservoir by inputting air into the printing-fluid reservoir as printing fluid is moved out of the printing-fluid reservoir

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through the printing-fluid interface during a first mode of operation and by outputting air from the printing-fluid reservoir as printing fluid is returned to the printing-fluid reservoir through the printing-fluid interface during the second mode of operation (air inlet allows air into the reservoir; figure 14, step 174); the printing container being laterally engaged with a printer (figure 1).

As per claim 34: a single structural piece forms the leading surface (figure 15, element 26).

**Childers et al. do not disclose the following claim limitations:**

As per claim 33: a free volume of printing fluid and air mixed together; a ball and septum air-interface; and wherein the printing-fluid interface and the air-interface are configured to block input and output of printing fluid and air until the printing-fluid container is laterally installed into a printing system and a first fluid connector engages the printing-fluid interface and a second fluid connector engages the air-interface.

**Pawlowski, Jr. et al. disclose the following claim limitations:**

As per claim 33: a printing-fluid reservoir configured to hold a free volume of printing fluid and air mixed together therein (column 1, line 51-column 2, line 19 discloses any type of cartridge).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing fluid container taught by Childers et al. with the disclosure of Pawlowski, Jr. et al. as it is well known to use different types of printing containers in the art. The disclosure of Pawlowski, Jr. et al. also allows for the reduction of leaking and improvement in the quality of the ink cartridge.

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**Barinaga discloses the following claim limitations:**

As per claim 33: a ball and septum assembly at an air interface (figure 8, elements 102 and 104 – allows air to escape during filling) and the printing fluid interface and air interface respectively configured to block input and output of printing fluid and air unless engaged by a fluid container (column 6, lines 4-17) until the printing-fluid container is installed into a printing system and a first fluid connector engages the printing-fluid interface and a second fluid connector engages the air-interface.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing fluid assembly taught by Childers et al. as modified with the disclosure of Barinaga in order to prevent leaks from the printing fluid container.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Childers et al. (WO 99/44830 A1) in view of Pawlowski, Jr. et al. (US 5812168 A), and further in view of Sakanobe et al. (US 4658268 A).

**Childers et al. as modified discloses:**

The apparatus of claim 38 .

**Childers et al. as modified does not disclose the following claim limitations:**

As per claim 41: returning fluid that contains at least one of air or froth.

**Sakanobe et al. discloses the following claim limitations:**

As per claim 41: the returning of a mixture of ink and air (column 14, lines 12-35).

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing apparatus taught by Childers et al. with the disclosure of Sakanobe et al. in order to improve print quality. It is well known that ink can have air bubbles mixed within it.

### ***Allowable Subject Matter***

Claims 43-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 3, 7-12, 16-34 and 38-41 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAURA E. MARTIN whose telephone number is (571)272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura E. Martin  
/L. E. M./  
Examiner, Art Unit 2853

/Manish S. Shah/

Primary Examiner, Art Unit 2853